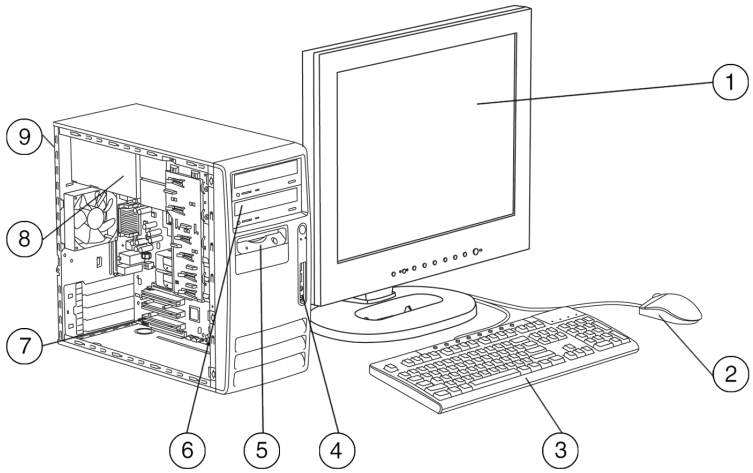
Overview

Microtower

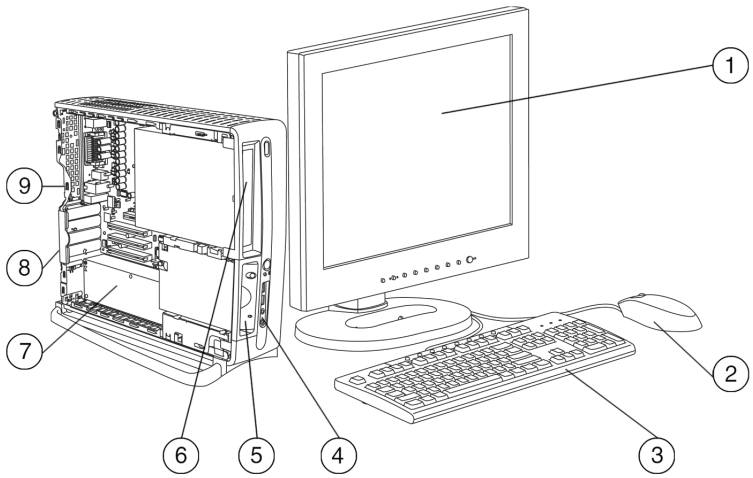
36.8 x 17.5 x 41.4 centimeters/14.5 x 6.88 x 16.31 inches



1. Monitor Sold Separately
2. 2-Button Scroll Mouse
3. Easy Access Keyboard
4. 2 USB 2.0, Headphone and Microphone
5. Optional diskette drive or 3.5" external bay
6. Expansion: 2 internal 3.5" bays, 2 external 5.25" bays and 2 external 3.5" bays for CD-ROM, DVD-ROM, CD-RW or Combo Drives
7. 3 full-height PCI slots and 1 8X AGP slot
8. 240-Watt Power Supply
9. Rear I/O: 4 USB 2.0, 1 standard serial port , 1 optional serial port, 1 parallel port, 2 PS/2, 1 RJ-45, 1 VGA, line-in/headphone/mic

Slim Tower

36.5 x 10 x 38.3 centimeters/14.4 x 3.95 x 15.1 inches



1. Monitor Sold Separately
2. 2-Button Scroll Mouse
3. Easy Access Keyboard
4. 2 USB 2.0, headphone and microphone
5. Optional diskette drive or 3.5" external bay
6. Expansion: 1 3.5" internal bay and 1 5.25" external bay for CD-ROM, DVD-ROM, CD-RW or Combo Drives
7. 185W Power Supply
8. 3 low-profile PCI slots and 1 8X AGP slot
9. Rear I/O: 4 USB 2.0, 1 standard serial port, 1 optional serial port, 1 parallel port, 2 PS/2, 1 RJ-45, 1 VGA, line-in/headphone/mic

Overview

At A Glance

- Intel® Pentium® 4 and Celeron™ processors
- Intel 865G chipset with Integrated Intel Extreme Graphics 2
- Integrated Broadcom NetXtreme Gigabit ethernet for HP
- 400, 533 and 800-MHz front side bus support
- Dual Channel Memory with 4 available color coded DIMM slots
- Intel HyperThread support
- SMART III Ultra ATA/100 Hard Drives
- SoundMax Digital AC97 Integrated Audio with Internal Speaker
- Color coded cables for ease of use
- Maximum serviceability with tool-less covers, drives, PCA, PCI, and AGP slots
- Energy Star compliance with energy-saving features
- Protected by HP Services, including a 3-1-1, standard warranty. Terms and conditions vary by country. Certain restrictions and exclusions apply.

HP Compaq Business Desktop d330

All d330's come with: 3/1/1 warranty

All pre-configured d330 models are setup with dual channel memory. For instance a 256-mb DDR pre-configured model will have 2*128mb DDR memory dims.

DG291A#ABA	**d330m/P2.66/40c/256/4U**	HP Compaq d330 Microtower, Intel 865G chipset, Intel Pentium 4 2.66GHz, 533MHz Front Side Bus, 256MB PC2700 DDR (2x128), Integrated Intel Enhanced Extreme Graphics, 40GB Ultra ATA Hard Drive (7200 rpm), 48X CD-ROM Drive, Integrated SoundMax III audio with internal speaker, Integrated Broadcom GB networking, Microsoft Windows XP Professional SP1, Microsoft Works v7.0, Norton Antivirus 2003, PS/2 Easy Access Internet Keyboard, USB Optical Scroll Mouse, 3-year Parts, 1-year Labor, 1-year Onsite warranty
DG293A#ABA	**d330sm/P2.66/40r/256/4E**	HP Compaq d330 Microtower, Intel 865G chipset, Intel Pentium 4 2.66GHz, 533MHz Front Side Bus, 256MB PC2700 DDR (2x128), Integrated Intel Enhanced Extreme Graphics, 40GB Ultra ATA Hard Drive (7200 rpm), 48/24X/48X CD-RW Drive, Integrated SoundMax III audio with internal speaker, Integrated Broadcom GB networking, Microsoft Windows XP Professional SP1, Microsoft Office XP Small Business, Norton Antivirus 2003, PS/2 Easy Access Internet Keyboard, USB Optical Scroll Mouse, 3-year Parts, 1-year Labor, 1-year Onsite warranty
DG273A#ABA	**d330sT/P2.66/40c/256/4U**	HP Compaq d330 Slim Tower, Intel 865G chipset, Intel Pentium 4 2.66GHz, 533MHz Front Side Bus, 256MB PC2700 DDR (2x128), Integrated Intel Enhanced Extreme Graphics, 40GB Ultra ATA Hard Drive (7200 rpm), 48X CD-ROM Drive, Integrated SoundMax III audio with internal speaker, Integrated Broadcom GB networking, Microsoft Windows XP Professional SP1, Microsoft Works v7.0, Norton Antivirus 2003, PS/2 Easy Access Internet Keyboard, USB Optical Scroll Mouse, 3-year Parts, 1-year Labor, 1-year Onsite warranty
DG275A#ABA	**d330sT/P2.66/40r/256/4E**	HP Compaq d330 Slim Tower, Intel 865G chipset, Intel Pentium 4 2.66GHz, 533MHz Front Side Bus, 256MB PC2700 DDR (2x128), Integrated Intel Enhanced Extreme Graphics, 40GB Ultra ATA Hard Drive (7200 rpm), 48/24X/48X CD-RW Drive, Integrated SoundMax III audio with internal speaker, Integrated Broadcom GB networking, Microsoft Windows XP Professional SP1, Microsoft Office XP Small Business, Norton Antivirus 2003, PS/2 Easy Access Internet Keyboard, USB Optical Scroll Mouse, 3-year Parts, 1-year Labor, 1-year Onsite warranty

		Slim Tower	Microtower
Processor and Speed - One of the following	**Intel Celeron Processors** with 400-MHz Front Side Bus, 128KB L2 cache		
	2.2-GHz	X	X
	2.4-GHz	X	X
	Intel Pentium 4 Processors with 533-MHz Front Side Bus, 512KB L2 cache		
	2.4-GHz (without HyperThread)	X	X
	2.66-GHz (without HyperThread)	X	X
	Intel Pentium 4 Processors with 800-MHz Front Side Bus, 512KB L2 cache with HyperThread		
	2.6-GHz	X	X
	2.8-GHz	X	X
	3.0-GHz	X	X
Hard Disk Drive - One of the following	40-GB 5400 rpm SMART III Ultra ATA/100	X	X
	40-GB 7200 rpm SMART III Ultra ATA/100	X	X
	80-GB 7200 rpm SMART III Ultra ATA/100	X	X
	160-GB 7200 rpm SMART III Ultra ATA/100	X	X
Memory - One of the following	128-MB DDR Synch Dram PC2700 (333-MHz) Non ECC (1 x 128)	X	X
	256-MB DDR Synch Dram PC2700 (333-MHz) Non ECC (2 x 128)	X	X
	512-MB DDR Synch Dram PC2700 (333-MHz) Non ECC (2 x 256)	X	X
	1-GB DDR Synch Dram PC2700 (333-MHz) Non ECC (2 x 512)	X	X
	2-GB DDR Synch Dram PC2700 (333-MHz) Non ECC (2 x 1GB)	X	X
	4-GB DDR Synch Dram PC2700 (333-MHz) Non ECC (4 x 1GB)	X	X
	256-MB DDR Synch Dram PC3200 (400-MHz) Non ECC (2 x 128)	X	X
	512-MB DDR Synch Dram PC3200 (400-MHz) Non ECC (2 x 256)	X	X
Removable Storage	Optional 1.44-MB Diskette Drive	X	X
	16MB USB HP Drive Key	X	X
	64MB USB HP Drive Key	X	X
	48X CD-ROM Drive	X	X
	48X/24X/48X CD-RW Drive	X	X
	16X/40X DVD-ROM with +R Read	X	X
	48X/24X/48X/16X Combo CD-RW/DVD-ROM Drive	X	X
	Zip 250 for 3.5" drive bay	X	
Keyboard - One of the following	PS/2 Easy Access Keyboard	X	X
	Wireless Keyboard with USB transceiver	X	X

Standard Features - Custom Components

Mouse - One of the following	PS/2 2-Button Scroll Mouse	X	X	X
	USB 2-Button Optical Mouse	X	X	X
	Wireless Optical Mouse	X	X	X
Modem	Lucent V.90 controllerless 56K Win PCI Fax/Modem	X		X
Audio	SoundMax Digital AC97 Integrated Audio with Internal Speaker	X		X
NIC	Integrated Broadcom NetXtreme Gigabit ethernet for HP	X		X
	Intel Pro 1000 MT NIC	X		X
	HPWL220 Wireless 802.11b PCI Network Card	X		X
Miscellaneous	IEEE 1394 Firewire PCI (firewire 400)	X		X
	2nd serial port options	X		X
	PCMCIA adapter with PCI card (Japan only)	X		X
	Tower stand	X		
Graphics	Intel Extreme Graphics 2 (integrated with Intel 865G chipset)	X		X
	NVIDIA Quadro4 100NVS AGP (64MB, dual VGA) full height PCI bracket			X
	NVIDIA Quadro4 100NVS AGP (64MB, dual VGA) low profile PCI bracket	X		
	NVIDIA GeForce4 MX440/8 (64MB, 8XAGP, VGA, S-video) full height PCI bracket			X
	NVIDIA GeForce4 MX440/8 (64MB, 8XAGP, VGA, S-video) low profile PCI bracket	X		
Security	Solenoid/Hood Sensor	X		X
	Rear Port Control Bracket	X		X
Operating System – One of the following	Microsoft Windows XP Professional with service pack 1	X		X
	Microsoft Windows XP Home with service pack 1	X		X
	Microsoft Windows 2000 with service pack 3	X		X
	Mandrake 9.1 Linux - Light	X		X
	NOTE: Microsoft Windows NT 4.0 is not available on system, but Softpaq drivers are downloadable from hp.com			

Software	Norton AntiVirus 2003	X	X
	Microsoft Office XP Professional	X	X
	Microsoft Office XP Small Business Edition	X	X
	For information about Intelligent Manageability visit: http://www.compaq.com/im	X	X
	Corel WordPerfect Office 2002	X	X
	Microsoft Works 7.0	X	X
	OpenOffice.org Office Suite		

NOTE: Office XP Small business and Office Professional not available in all countries

NOTE: Norton AntiVirus includes FREE 60 day live update subscription

Standard Features

	Slim Tower	Microtower
Processor	Intel Pentium 4	
CPU Bus Speed Supported	800-MHz, 533-MHz or 400-MHz FSB	
Standard L2 Cache – Pentium 4	512-KB ECC depending on processor speed	
Chipset	Intel 865G	
Memory Expansion Slots	4 DIMMs	4 DIMMs
Memory Type Supported	DDR (ECC not supported by Chipset)	
Memory Speed Supported	PC2700 (333-MHz) or DDR Synch DRAM PC3200 (400MHz) Non-ECC	
Maximum Memory	4-GB	4-GB
Network controller	Integrated Broadcom NetXtreme Gigabit ethernet for HP	
Graphics	Integrated Intel Extreme Graphics 2	
Audio	Integrated Digital Audio with SPDif 6-channel pass-through, Stereo Microphone, Active Noise Cancellation and Yamaha XG Lite Softsynth support	
PCI	3 low-profile	3 full-length 32 bit PCI
AGP	1 low-profile 8XAGP	1 full-height, full-length 8XAGP
Bays	Total Bays = 3	Total Bays = 6
Internal Bays	(1) internal hard drive bay (2nd HDD bay via external 3.5" bay)	(2) 3.5 inch hard drive bays
External Bays	(1) full-length 5.25" (1) full-length 3.5"	(2) full-length 5.25" (2) full-length 3.5"
Wireless Support	PCI card or external USB	
Front I/O	2 USB 2.0, headphone, and microphone	
Rear I/O	4 USB; 1 standard serial port, 1 optional serial port; 1 parallel port; PS/2 keyboard and mouse; 1 RJ-45; 1 VGA; rear line in/line out/mic in	
PS/2 Keyboard	1	1
PS/2 Mouse	1	1
VGA Adapter	1	1
Chassis Dimensions (H x W x D) Centimeters	36.5 x 10 x 38.3 (with stand)	36.8 x 17.5 x 41.4
Chassis Dimensions (H x W x D) Inches	14.4 x 3.95 x 15.1 (with stand)	14.5 x 6.88 x 16.31
System Weight	22.2 lbs 10.07 kg)	24.0 lbs (10.89 kg)
System Volume	859 sq. in. (14.1 liters)	1651 sq. in. (27.0 liters)
Shipping Weight	29 lbs (13.15 kg)	34 lbs (15.42 kg)
Shipping Box Size	23.59 x19.66 x 9.69 in (59.92 x 49.94 x 24.61 cm)	22.20 x 13.00 x 23.50 in (56.39 x 33.02 x 59.69 cm)
Power Supply	185-watt passive PFC (user selectable 115V / 230V)	240-watt passive PFC (user selectable 115V / 230V)
Hard Drive Interfaces Supported	2 Ultra ATA/100 interfaces	
Hard Drive Controller (PCI) Supported	Ultra ATA 100/66/33	
Preinstalled Software		
Windows 2000 SP3	X	X
Windows XP Pro SP1	X	X
Windows XP Home SP1	X	X
Computer Setup Utility	X	X
Diagnostics for Windows	X	X
Microsoft Internet Explorer	X	X
NOTE: Windows NT 4.X drivers available on web - Softpaqs only		

After-Market Options

		Slim Tower	Microtower	Part Number
Communications	**Modems**			
	PCI v.90 56k modem	X	X	DC131A
	USB v.92 56k modem	X	X	DE585A
	NICs			
	Broadcom NetXtreme Gb Ethernet PCI NIC	X	X	DC194A
	Intel Pro/1000 MT Gb Ethernet PCI NIC	X	X	DC193A
	Wireless 802.11b PCI (WL220) (full height bracket) WiFi compliant	X	X	DC756B
	Wireless 802.11b USB (WL215) WiFi compliant	X	X	DC758A
Graphics	**2D Graphics**			
	NVIDIA GeForce FX 128MB DDR w/ VGA&S Video [AGP 8X]	X	X	DK906A
	2D Multi-Display Graphics			
	NVIDIA Quadro4 100NVS 64-MB AGP VGA dualhead		X	DC665A
	NVIDIA Quadro4 100NVS 64-MB PCI VGA, DVI-I, S-video	X		DC664A
	Cables			
	NVIDIA Quadro4 100NVS DVI Cables for use with DC665A		X	DC157A
Hard Drives	**Ultra ATA/100 SMART Hard Drives**			
	160-GB 7200 rpm Ultra ATA/100 Hard Drive	X	X	DC189A
	80-GB 7200 rpm Ultra ATA/100 Hard Drive	X	X	DC181A
	40-GB 7200 rpm Ultra ATA/100 Hard Drive	X	X	DC180A
	Cables			
	2 Device IDE Cable	X	X	DC183A
Input/Output Devices	**Keyboards**			
	PS/2 Easy Access Keyboard	X	X	DC167B
	USB Easy Access Keyboard – wireless keyboard and mouse kit	X	X	DC170B
	USB Easy Access SmartCard Keyboard	X	X	DC169B
	USB Easy Access Keyboard	X	X	DC168B
	Mice			
	PS/2 2-button Scroll Mouse	X	X	DD440B
	USB 2-button Optical Scroll Mouse	X	X	DC172B
	Wireless Optical mouse	X	X	DC210B
	Other			
	IEEE1394 Firewire PCI card	X	X	DE471A

After-Market Options

Memory (DIMMs)	**266-MHz (PC2100) DDR DIMMs Non-ECC**			
	512-MB DDR Synch Dram PC2100 (266-MHz) Non-ECC	X	X	DC165A
	256-MB DDR Synch Dram PC2100 (266-MHz) Non-ECC	X	X	DC164A
	333-MHz (PC2700) DDR DIMMs Non-ECC			
	1-GB DDR Synch Dram PC2700 (333-MHz) Non-ECC	X	X	DC341A
	512-MB DDR Synch Dram PC2700 (333-MHz) Non-ECC	X	X	DC340A
	256-MB DDR Synch Dram PC2700 (333-MHz) Non-ECC	X	X	DC339A
	400-MHz (PC3200) DDR DIMMs Non-ECC			
	512-MB DDR Synch Dram PC3200 (400-MHz) Non-ECC	X	X	DE467A
	256-MB DDR Synch Dram PC3200 (400-MHz) Non-ECC	X	X	DE466A
Monitors	**TFTs**			
	TFT1501/L1502 - 15 inch Flat Panel TCO (VGA)			
	TFT1520 - 15 inch Flat Panel TCO (VGA and DVI)			
	TFT1520m - 15 inch Flat Panel plus Comm Station TCO (VGA and DVI)			
	TFT1701/L1702 - 17 inch Flat Panel TCO			
	TFT1720 - 17 inch Flat Panel TCO (VGA and DVI)			
	TFT1720m - 17 inch Flat Panel plus Comm Station TCO (VGA and DVI)			
	L1825 and TFT1825 - 18 inch Flat Panel TCO (VGA and DVI)			
	L1925 and TFT1925 - 19 inch Flat Panel TCO (VGA and DVI)			
	TFT2025 - 20 inch Flat Panel TCO (VGA and DVI)			
	CRTs			
	P930 – 19-inch Aperture Grille Monitor			
	P1130 – 21-inch Aperture Grille Monitor			
	V7550 - 17 inch Flat Screen			
	S9500 - 19 inch CRT			
	S7500 - 17 inch CRT			
	S5500 - 15 inch CRT			
Multimedia	JBL Platinum Series Speakers (NA & Japan only)	X	X	DE893B
	PC Comm station (no keyboard or mouse)	X	X	P8814A
	PC Comm station pro (with wireless keyboard and optical mouse)	X	X	P8815A
Optical Drives	**DVD-ROM Drive**			
	16X/40X DVD-ROM w/ +R read	X	X	DC151B
	CD-ROM Drive			
	48X Max CD-ROM Drive	X	X	DC143B
	DVD+R/+RW Drive			
	4X DVD+R/+RW Drive	X	X	DC517B
	CD-RW Drive			
	48X/24X/48X CD-RW Drive	X	X	DC196B
	Combo Drive			
	48X Combo DVD-ROM/CD-RW Drive	X	X	DC197B

After-Market Options

Removable Storage	**Diskette Drives and Media**			
	ZIP 250 Drive	X	X	DC140B
	ZIP 250 media 3-pack	X	X	DC138A
	ZIP 750 Drive	X	X	DC518B
	ZIP 750 media 3-pack	X	X	DC519A
	1.44MB USB Floppy drive - external	X	X	DC141B
	16-MB USB Disk-on-Key	X	X	DC192B
	64-MB USB Disk-on-Key	X	X	DC191B
	128-MB USB Disk-on-Key	X	X	DC190B
	Tape Drives and Media			
	TR5 10/20 GB IDE Tape Drive	X	X	DC139B
	TR5 10/20 GB Media 3-Pack	X	X	DC137A
Security	Rear Port Controller Cover	X		DE897A
	Rear Port Controller Cover	X		DE898A
	Rear Port Controller Cover		X	DE899A
	Solenoid Hood Lock Kit	X		DE472A
	Solenoid Hood Lock Kit	X		DK415A
	Solenoid Hood Lock Kit		X	DK414A
	Kensington Security Lock	X	X	DC368A
	Chassis clamp lock (no cable)	X	X	DE817A
	Chassis clamp lock (with 6 foot cable)	X	X	DE818A
Brackets/Stands	Tower stand	X		DE621B
	Tower Stand d330 DT 100 unit bulk pack (50 pairs)	X		DC620B
	Tower Stand	X		DE870A
	Tower Stand (Carbonite) d530SFF, d330ST 50-stand bulk-pack	X		DE999A
	Wall Mount Bracket / Security Sleeve	X		DK412A
Common Chassis Enhancements	Assorted 3.5" bezel kit d330ST (floppy, HDD, ZIP)	X		DF783B
	5.25" Blank Bezel Kit (Carbonite 50/PK) uT, DT,ST	X	X	DC177B
	3.5" FDD bezel kit d330uT		X	DF782B

865G chipset

DDR SYNCH DRAM Non-ECC Memory

It is not necessary to add memory in pairs. Memory upgrades are accomplished by adding single or multiple DIMMs of the same or varied sizes. This chart does not represent all possible memory configurations. The Intel 865G chipset supports non-ECC 266MHz (PC2100), 333MHz (PC2700) and 400MHz (PC3200) DDR memory.

For best performance, add in pairs, add in different channel in matching slots (color coded), and do not mix speeds.

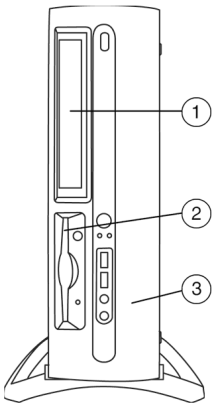
Maximum Memory (Slim Tower and Microtower)
Supports up to 4-GB of DDR SYNCH DRAM.

Possible Memory Configurations (Slim Tower and Microtower)
Not all memory configurations possible are represented below.

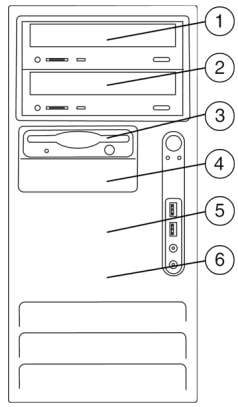
DIMM Size	Slot			
	Channel A		Channel B	
	1	2	3	4
128-MB	128-MB			
256-MB	128-MB		128-MB	
512-MB	512-MB			
512-MB	256-MB		256-MB	
1-GB	1-GB			
1-GB	512-MB		512-MB	
2-GB	1-GB		1-GB	
2-GB	512-MB	512-MB	512-MB	512-MB
4-GB Maximum	1-GB	1-GB	1-GB	1-GB

Storage

Slim Tower



Microtower



	Quantity Supported	Position Supported	Controller
Slim Tower			
Diskette Drive	1	2	Diskette
5.25" Storage Bays	1	1	IDE
3.5" Storage Bay	2	3	IDE
Microtower			
Diskette Drive	1	3	Diskette
5.25" Storage Drive Bays	2	1, 2	IDE
3.5" Storage Drive Bays	3	4, 5, 6	IDE

Base Unit Contents	Slim Tower	Microtower
Processor	Intel Pentium 4 Socket N – 478	Intel Pentium 4 Socket N - 478
CPU Bus Speed Supported	800-MHz, 533-MHz or 400-MHz FSB	800-MHz, 533-MHz or 400-MHz FSB
Coprocessor	Integrated	Integrated
CPU Package	FC-PGA2	FC-PGA2
Standard L2 Cache – Pentium 4	512-KB ECC depending on processor speed	512-KB ECC depending on processor speed
L2 Cache Architecture / Speed – Pentium 4	Full core clock speed	Full core clock speed
Cache Upgradeable – Pentium 4 and Celeron	Not upgradeable – Integrated into Processor	Not upgradeable – Integrated into Processor
System board with Intel 865G Chipset with Integrated Intel Extreme Graphics 2	X	X
Cables	ATA Cable	ATA Cable
Quick Setup Poster	X	X
Product Documentation on CD	X	X
Operating System CD	X	X
Restore CD	X	X
Power Cord	X	X
Keyboard	X (PS/2)	X (PS/2)
Mouse	X (PS/2)	X (PS/2)
Memory Expansion Slots	4 DIMMs	4 DIMMs
Memory Type Supported	DDR (ECC not supported by Chipset)	DDR (ECC not supported by Chipset)
Memory Speed Supported	DDR Synch DRAM PC2700 (333-MHz) or DDR Synch DRAM PC3200 (400MHz) Non-ECC	DDR Synch DRAM PC2700 (333-MHz) or DDR Synch DRAM PC3200 (400MHz) Non-ECC
Maximum Memory	4-GB	4-GB
Memory Parity	Not Needed for non-ECC	Not Needed for non-ECC
ECC Memory	Not Supported by chipset	Not Supported by chipset
Serial Presence Detect Support	Supported	Supported
PCI	3 full-length PCI	3 full-length PCI
AGP	1 low-profile AGP 8X	1 full-length, full-height 8X AGP
Bays	Total Bays = 3	Total Bays = 6
Internal	(1) 3.5 inch ATA Hard Drive (2nd HDD bay via external 3.5" bay)	(2) 3.5 inch ATA Hard Drive
External:	(1) 5.25 inch full-length (1) 3.5 inch full length	(2) 5.25 inch full-length (2) 3.5 inch full length
Wireless Support	PCI card or external USB	PCI card or external USB
Parallel Port	1	1
Serial Port	1 standard with 2nd optional	1 standard with 2nd optional
USB Keyboard	Optional	Optional
USB Mouse	Optional	Optional
PS/2 Keyboard	1	1
PS/2 Mouse	1	1
VGA Adapter	1	1
Chassis Dimensions (H x W x D) Centimeters	10 x 36.5 x 38.3	36.8 x 17.5 x 41.4
Chassis Dimensions (H x W x D) Inches	3.95 x 14.4 x 15.1	14.5 x 6.88 x 16.31
Hard Drive Interfaces Supported	2 ULTRA ATA/100 interfaces	2 ULTRA ATA/100 interfaces
Hard Drive Controller (PCI) Supported	ULTRA ATA 100/66/33	ULTRA ATA 100/66/33

System Board	Slim Tower	Microtower
Architecture	P4/PCI/AGP 8X	P4/PCI/AGP 8X
Chipset	Intel 865G Chipset	Intel 865G Chipset
I/O Controller	SMSC LPC47B387	SMSC LPC47B387
System Board Form Factor	UATX	UATX
Processor Socket - 478 Pin ZIF	X	X
DIMM Connectors (2.5V)	4	4
AGP Connector (1.5V)	1 (8X)	1 (8X)
Integrated Intel Extreme Graphics 2	X	X
PCI Connectors	3; 5 with optional extender	3
Flash ROM	X	X
Audio (AC97 Integrated Audio)	X	X
CD ROM IN (Audio)	X	X
AUX IN (Audio)	X	X
Clear CMOS Button	X	X
CPU Fan Header	X	X
Chassis Fan Header	X	X
Chassis Speaker Header	X	X
CMOS Battery Holder - Lithium	X	X
Hood Lock Header	X	X
Hood Sensor Header	X	X
Integrated Broadcom NetXtreme Gigabit ethernet for HP	X	X
Wake-On-Lan®	X	X
ASF 1.0 (Alert Standard Format)	X	X
Power Supply Header	X	X
Power Switch, Power LED & Hard Drive LED Header	X	X
Password Clear Header	X	X
SCSI LED Header	X	X

Chassis	Slim Tower	Microtower
Color	Carbonite/Silver	Carbonite/Silver
System Board Form Factors Supported	Standard m μATX	Standard μATX
Cooling Solutions Supported	X	X
Power Supply Fan (Variable Speed)	X	X
Processor Fan-Heatsink (Variable Speed)	X	X
Chassis Fan	X	X
Internal Speaker	X	X
Security Locks Supported	Kensington Cable Lock Provision (Lock not included) Hood Cover Security Loop (Lock not included) Smart Cover Lock (option) – Locking solenoid controlled via F10 setup (failsafe key)	Kensington Cable Lock Provision (Lock not included) Hood Cover Security Loop (Lock not included) Smart Cover Lock (option) – Locking solenoid controlled via F10 setup (failsafe key)

Power Supply	Slim Tower	Microtower
Power Supply	185 Watt Power Supply – PFC (115v/230v line switch)	240 Watt Power Supply – PFC (115v/230v line switch)
Maximum Rated Power	185 Watt	240 Watt
Full Ranging Input (No Line Select Switch)	-	-
Active Power Factor Correction (APFC) (Input Current is nearly 1/2 a non-APFC PS)	-	-
Passive Power Factor Correction (PFC)	X	X
Operating Voltage Range	90 – 132/180 – 264 VAC	90 – 132/180 – 264 VAC
Rated Voltage Range	100 – 127/200-240 VAC	100 – 127/200-240 VAC
Rated Line Frequency	50/60 Hz	50/60 Hz
Operating Line Frequency Range	47 – 63 Hz	47 – 63 Hz
Rated Input Current	5A/2.5A	6A/3A
Heat Dissipation	Typical 256 btu/hr (65 kg-cal/hr) Maximum 971 btu/hr (245 kg-cal/hr)	Typical 256 btu/hr (65 kg-cal/hr) Maximum 1260 btu/hr (318 kg-cal/hr
Power Supply Fan	60mm variable speed	92mm variable speed
Processor Fan		
Energy Star Compliant	X	X
Power Management		
Screen Blanking		
Hard Disk 'Idle' Mode		
System Idle Mode		
Cache Memory Power-Down		
Blue Angel Compliant (<5w in S5-- Power Off)	X	X
FEMP Standby Power Compliant (<2W in S5 – Power Off) NOTE: User must disable the "S5 Wake on LAN" in the F10 setup (default is enabled)	X	X
Power Consumption in ES Mode - Suspend to RAM (S3) (Instantly Available PC)	2.5W to 3W	2.5W to 3W
Processor/Cache Memory Power -Down (S3)	< 3W	< 3W
CD-Rom Spins Down when not in use		
Environmental and Mechanical Engineering Support Center	http://env-webserver.ccm.cpqcorp.net/EMESC/default.htm	

ROM Features	Description	Slim Tower	Microtower
Instantly Available PC (Suspend to RAM - S3)	Allows for very low power consumption with quick resume time	X	X
ROM Based F10 Setup	Review and customize BIOS settings	X	X
Remote System Installation via F12 (PXE) (Remote Boot from Server)	Allows a new or existing system to boot over the network and download software, including the operating system	X	X
System/Emergency ROM Flash Recovery with Video	Recovers corrupted system BIOS	X	X
CMOS Archive and CMOS Restore	Holding down the power button restores the last known good BIOS settings (from previous restart) if the system gets into a locked state after configuration changes are made	X	X
Auto Setup when New Hardware Installed	System automatically detects addition of new hardware	X	X
Serial, Parallel, USB, Audio, Network, Enable/Disable Port Control	Enable or disables serial, parallel, USB, audio, and network ports	X	X
Removable Media Write/Boot Control	Prevents ability to boot from removable media on supported devices (and can disable writes to media on supporting devices)	X	X
Network Server Mode	Allows for secured keyboard-less operation	X	X
Power-On Password	Prevents an unauthorized person from booting up the computer	X	X
Setup Password	Prevents an unauthorized person from changing the system configuration	X	X
Replicated Setup	Saves BIOS settings to diskette or USB disk-on-key in human readable file. SSM and Repset.exe utility can then replicate these settings on machines being deployed without entering ROM-based F10 setup	X	X
Memory Change Alert (Requires Insight Management Agent)	Alerts management console if memory is removed or changed	X	X
Thermal Protection	Protects system components from thermal damage. If excessive temperatures are encountered the computer automatically shuts down without warning before hardware component damage occurs.	X	X
Thermal Alert (Requires Insight Management Agent)	Monitors the temperature state within the chassis. Three modes: • NORMAL – normal temperature ranges • ALERTED - excessive temperatures are detected. Raises a flag so action can be taken to avoid shutdown or provide for a smoother system shutdown • SHUTDOWN – excessive temperatures are encountered. Automatically shuts down the computer without warning before hardware component damage occurs	X	X
Cover Removal Alert (Requires Insight Management Agent for network alerts)	Notifies the Network Administrator and end user when the cover has been removed without authorization through an electronic switch residing inside the computer. Can be set to one-of-three modes: • DISABLED - user/network administrator does not want to be made aware of the computer hood removal • NOTIFY USER - notifies user/network administrator that the hood has been removed, but no action required before re-booting the computer • UP PASSWORD – notifies user/network administrator that the hood has been removed and administrator password is required before the computer will continue to boot	-	Optional
Master Boot Record Security	Detects changes to MBR and optional restoration, useful in protecting from viruses	X	X
Remote ROM Flash	Provides secure, fail-safe ROM image management from a central network console	X	X
Remote Wakeup	• System administrators can power on, restart, and power off a client computer from a remote location. • Enables cost-effective power consumption when the administrator needs to distribute software, perform security management, or update the ROM.	X	X

ACPI (Advanced Configuration and Power Management Interface)	• Allows the system to wake from a low power mode • Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system	X	X
Keyboard-less Operation	The system can be operated without a keyboard	X	X
SMBIOS	System Management BIOS, previously known as DMI BIOS, for system management information	X	X

System Environmental Specs	Description	Slim Tower	Microtower
Acoustics: Advanced Power Management - On	-----		
Operating (*Using 11ms half-sine shock pulse)	-----		
Non-Operating (*Using 11ms half-sine shock pulse)	-----		
Operating	-----		
Non-Operating	-----		
Operating (maximum wet bulb temp., non-condensing)	-----		
Non-operating (maximum wet bulb temp., non-condensing)	-----		
Operating	-----		
Non-operating (Maximum allowable altitude change rate is 1500 ft/min)	-----		
Environmental and Mechanical Engineering Support Center (EMESC) - Intranet Web Site only	http://env-webserver.ccm.cpqcorp.net/EMESC/default.htm		

Software	Description	Slim Tower	Microtower
Preinstalled Software			
Windows 3.1		-	-
Windows 95		-	-
Windows 98		-	-
Windows NT 4.X (drivers available on web - Softpaqs only)		-	-
Windows 2000 SP3		X	X
Windows XP Pro SP1		X	X
Windows XP Home SP1		X	X
Computer Setup Utility		X	X
Diagnostics for Windows		X	X
Microsoft Internet Explorer		X	X
Pre-loaded Software			
Altiris Deployment Solution Agent	Downloadable from http://www.altiris.com/	X	X
Insight Management Agent	Downloadable from http://www.hp.com/go/easydeploy	X	X
Local Diskette Boot		X	X
Network Boot		X	X
Disk-on-Key Boot		X	X

Initial Configuration and Deployment	Description	Slim Tower	Microtower
HP Client Manager Software (free)	A FREE solution that provides asset tracking, alerting, diagnostics, and SoftPaq BIOS and driver distribution for business desktops, notebooks, and workstations. HP Client Manager Software "plugs" into the Altiris Notification Server infrastructure to provide value-add information that can be leveraged by all Altiris solutions	X	X
Altiris Solutions (30-day trial version)	A suite of solutions that focus on business needs in four areas, saving time and freeing resources to address other crucial issues: • Deployment & Migration • Software & Operations Management • Inventory & Asset Management • Help Desk & Problem Resolution	X	X
PC Transplant Pro (30-day trial version)	Makes transferring the files and settings that make your PC unique quick and intuitive process	X	X
System Software Manager (free)	Detects and updates BIOS, device drivers, and management agent versions on your networked PCs	X	X
Replicated Setup	Saves BIOS settings to diskette or USB disk-on-key in human readable file. Repset.exe utility and SSM can then replicate these settings on machines being deployed without entering ROM-based F10 setup	X	X
Insight Manager	-----	X	X
Support Software CD	-----	X	X
Software Restore CD	Restores computer to its original factory shipping image	X	X
Asset Tag	• Repository for storing company-specific property asset numbers for easy tracking • Initially set equal to the system serial number • Stored in a protected section of non-volatile memory that can be accessed and modified with the F10 Setup program	X	X
DIMM Serial Presence Detect	Detects whether or not memory DIMMs are present and their type	X	X
Hard drive serial number, model, and manufacturer	Hard drive manufacturer, model, and serial number is stored in the hard drive firmware and reported in ROM-based F10 setup	X	X
Monitor serial number, model & manufacturer	-----	X	X
System serial number, model, & manufacturer	System serial number, model, & manufacturer stored in a non-volatile memory and can be retrieved with management SW or viewed in ROM-based F10 setup	X	X
ROM revision levels	• Identifies system ROM revision levels and reports in ROM-based F10 setup • Version is stored in an industry standard memory location (SMBIOS) so that management SW applications can use and report this information	X	X
System board revision level	• Allows management SW to read the revision level of the system board • Revision level is digitally encoded into the hardware and cannot be modified	X	X
Memory Change Alert	Alerts management console if memory is removed or changed	X	X
Ownership Tag	A user-defined string stored in non-volatile memory that is displayed in the BIOS splash screen	X	X

Security Features	Description	Slim Tower	Microtower
Smart Cover Lock	Remote operated system lock	X	X
Smart Cover Sensor (Requires Insight Management Agent for network alerts)	Notifies the Network Administrator and end user when the cover has been removed without authorization through an electronic switch residing inside the computer. Can be set to one-of-three modes: • DISABLED -user/network administrator does not want to be made aware of the computer hood removal • NOTIFY USER - notifies user/network administrator that the hood has been removed, but no action required before re-booting the computer • UP PASSWORD – notifies user/network administrator that the hood has been removed and administrator password is required before the computer will continue to boot	X	X
Mechanical Hood Security Provision	Security Loop	X	X
Kensington Lock Support	Kensington lock slot on the chassis	X	X
Cable Lock Provision	Physically secure computer hardware from theft	X	X
Serial, Parallel, USB Enable/Disable	Enable or disable serial, parallel or USB ports and hide them form the operating system	X	X
Port Control	Attaches to back of chassis covering external ports and thereby preventing unauthorized access; also aids in cable management	X	X
Removable Media Write/ Boot Control	Prevents the computer from being booted from removable media on supported devices (and can disable writes to media)	X	X
Power-On Password	Prevents an unauthorized person from booting up the computer	X	X
Setup Password	Prevents an unauthorized person from changing the system configuration	X	X

Fault Notification and Recovery	Description	Slim Tower	Microtower
SMART Hard Drives, Fault Notification, & Prefailure Warranty	• Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted • Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count • By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure	X	X
Proactive Backup	• Initiates an automatic backup of the computers SMART hard (to a local tape device for example) when an imminent failure is predicted • Prevents data loss and end-user down time due to a failing hard drive	X	X
Surge Tolerant Full Ranging Power Supply	Withstands power surges up to 2000V	X	X
Thermal Alert Sensor	Monitors the temperature within the chassis • NORMAL –normal temperature ranges • ALERTED - excessive temperatures are detected. Raises a flag so that appropriate action can be taken to avoid shutdown or provide for a smoother system shutdown • SHUTDOWN – excessive temperatures are encountered. Automatically shuts down the computer without warning before hardware component damage occurs	X	X
Ultra ATA Integrity Monitoring (CRC Checking)	Provides data transfer verification and proactive notification of hard drive data transmission problems with recommendations for enhancing system performance. It detects all the following errors types: • single bit errors • double bit errors • an odd number of errors • error bursts up to 32-bits long	X	X

System Software Updating	Description	Slim Tower	Microtower
Active Update	• Advanced web-based application that provides proactive notification and automatic download of software updates for most Compaq commercial products • Updates may be deployed using Compaq or third-party deployment tools • Software subscription filters automatically identify and download only relevant content based on the user-defined subscription information	X	X
Remote ROM Flash	Provides secure, fail-safe ROM image management from a central network console	X	X
Remote Wakeup/ Remote Shutdown	• System administrators can power on, restart, and power off a client computer from a remote location. • Enables cost-effective power consumption when the administrator needs to distribute software, perform security management, or update the ROM.	X	X
Support Software CD & WWW	-----	X	X

Other Features	Description	Slim Tower	Microtower
ACPI-Ready Hardware	Advanced Configuration and Power Management Interface (ACPI). • Allows the system to wake from a low power mode. • Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system	X	X
SMBIOS	System Management BIOS, previously known as DMI BIOS, for system management information	X	X
Wired for Management Support	Intel-driven, industry-wide initiative to make Intel architecture-based PCs, servers and mobile computers more inherently manageable right out of the box and over the network	X	X
Dual-State Power Button	Power button acts as either an on/off button and suspend-to-sleep button	X	X

Serviceability Features of System	Description	Slim Tower	Microtower
Dual Color Power LED on Front of Computer (Indicates Normal Operations and Fault Conditions)	-----	X	X
Diagnostic LED Explanation Table	Number of 1-second red LED blinks followed by 2-second pause, then repeats: 2-processor thermal protection activated 3-processor not installed 4-power supply failure 5-memory error 6-video error 7-PCA failure (ROM detected failure prior to video) 8-invalid ROM, bootblock recover mode	X	X
System/Emergency ROM Flash Recovery with Video	Recovers corrupted system BIOS	X	X
Compaq Diagnostic for Windows Software	-----	X	X
Compaq Configuration Record SW	-----	X	X
Over-Temp Warning on Screen (Requires IM Agents)	-----	X	X
Compaq OS CD (Restore OS CD)	Restores computer to its original factory shipping image	X	X
Compaq Restore CD	Restores the computer to its original factory shipping image	X	X
Flash ROM	-----	X	X
3.3V Aux Power LED on System PCA	-----	X	X
Dual Function 5V Aux Power LED (ON) / PS_ON LED (OFF) on System PCA	-----	X	X
Diagnostic Power Switch LED on board	-----	X	X
Clear Password Jumper	-----	X	X
Clear CMOS Button	-----	X	X
CMOS Battery Holder for easy Replacement	-----	X	X
Processor ZIP Socket for easy Upgrade	-----	X	X
DIMM Connectors for easy Upgrade	-----	X	X
NIC LEDs (integrated) (Green & Amber)	Used to determine NIC status	X	X

Serviceability Features of Chassis	Description	Slim Tower	Microtower
Dual Color Power and HD LED - To Indicate Normal Operations and Fault Conditions	-----	X	X
ASF 1.0 support (Alert Standard Format)	Industry-standard specification for network alerting in operating system-absent environments	X	X
Smart Cover Sensor (Requires Insight Management Agent for network alerts)	Notifies the Network Administrator and end user when the cover has been removed without authorization through an electronic switch residing inside the compute. Can be set to one-of-three modes: • DISABLED - user/network administrator does not want to be made aware of the computer hood removal • NOTIFY USER - notifies user/network administrator that the hood has been removed, but no action required before re-booting the computer • UP PASSWORD – notifies user/network administrator that the hood has been removed and administrator password is required before the computer will continue to boot	-	Optional
Smart Cover Lock	Remote operated system lock	X cover can be locked with security loop or kensington	X (Option)
Front power switch	-----	X	X
Green Pull Tabs, and Quick Release Latches for easy Identification	-----	X	X
Color coordinated cables and connectors		X	X
System memory can be upgraded without removing the system board or any internal components	Eases memory upgrading	X	X
Tool-less Hood Removal	Eases entry to the chassis without use of special tools	X (single latch)	X (2 thumbscrews)
Tool-less Hard Drive, CD & Diskette Removal	-----	X	X
Tool-less System Board Removal	No special tools required for system board removal or maintenance	X	X
Universal Tower Stand	Necessary to safely orient as a tower	X (Standard)	-
Drive Self Tests (DPS)	• Drive Protection System • A diagnostic hard drive self test. It scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user. • Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the computer's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced. • The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures	X	X
DPS Access through F10 Setup during Boot		X	X
DPS Access through Diagnostics for Windows		X	X
SMART Technology (Self-Monitoring, Analysis and Reporting Technology)	• Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted • Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count • By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure	X	X
SMART I - Drive Failure Prediction		X	X
SMART II - Off-Line Data Collection		X	X
SMART III - Off-Line Read Scanning with Defect Reallocation		X	X

Service and Support

On-site Warranty and Service NOTE 1 This three-year (3-1-1), limited warranty and service offering delivers three years of parts and one year of both labor and on-site repair. Response time is next business-day NOTE 2 and includes free telephone support NOTE 3 24 x 7. Global coverage NOTE 2 ensures that any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering.

On-site Warranty NOTE 1: This one-year (1-1-1), limited warranty delivers one year of on-site, next business-day NOTE 2 service for parts and labor and includes free telephone support NOTE 3 24 x 7. Global coverage NOTE 2 ensures that any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering. One-year onsite and labor are not available in all countries.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply

NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country

NOTE 3: Technical telephone support applies only to HP-configured, HP and HP-qualified, third-party hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries

AC97 Integrated Audio	Type	Integrated ADI 1981B
	AC97 Stereo Codec	Yes
	FM Synthesis Support	Yamaha XG Lite
	Sound Blaster Compatibility	Yes
	Audio Jacks	Mic-In (20-K ohm Input Impedance); Rear Stereo and Front Analog Mic ports available Line-In (12-K ohm Input Impedance) Headphone-Out (2.5 Ohms Output Impedance, expects at least a 32 ohm load)
	NOTE: *Internal Speaker Amplifier is for Internal Speaker only. External Speakers need to be powered externally.	
	Sampling	7 kHz – 48 kHz
	Wavetable Syntheses (software)	GM and FM Midi Support, Direct Music and Down Loadable Soundset (4 Meg DLS Level 1 and 2 Support)
	3D Positional Sound	No
	Digital Audio via (S/PDIF)	Yes
	Analog Audio:	Yes
	Number of Channels on Line-Out (mono/stereo)	Stereo (Left & Right channels)
	Internal Audio Speaker Power Rating	3W
	Internal Speaker	Yes
	Hardware Equalizer for Internal Speaker	Fixed 7 Band Parametric DigitalEQ
	External Speaker Jack (Headphone/Line-Out)	Yes

Broadcom NetXtreme Gigabit Ethernet	**Connector**	RJ-45
	Controller	Broadcom 5782 PCI LAN Controller
	Memory	Integrated 96Kb frame buffer memory
	Data rates supported	10/100/1000 Mbps
	Compliance	IEEE 802.1A, 802.1P, 802.1P, 802.1Q, 802.2, 802.3, 802.3AB and 802.3u compliant, 802.3x flow control
	Bus architecture	PCI 2.2
	Data path width	32-bit, 33/66 MHz bus interface
	Data transfer mode	Bus-master DMA
	Hardware certifications	FCC, B, CE, TUV- cTUVus Mark Canada and United States, TUV- GS Mark for European Union
	Power requirement	1.48 watts @ +3.3V AUX supply with 5V tolerance
	Boot ROM support	Yes
	Network transfer rate	10BASE-T (half-duplex) 10 Mbps
		10BASE-T (full-duplex) 20 Mbps
		100BASE-TX (half-duplex) 100 Mbps
		100BASE-TX (full-duplex) 200 Mbps
		1000BASE-T, 1000 Mbps
	Environmental	Operating temperature 32° to 131° F (0° to 55° C)
		Operating humidity 85% at 131° F (55° C)
	Dimensions	4.7 x 2.0 x 0.08 inches (12 x 5 x 1.9 cm)
	Operating system driver support	Microsoft Windows NT 4.0, Microsoft Windows 98, Microsoft 2000, Microsoft XP, Linux 2.2, Linux 2.4
	Management capabilities	ACPI, WOL and DMI 2.0, PXE 2.0, WfM 2.0, Broadcom mgmt utility
	Alerting	ASF 1.0 with Remote Managemeent and Control Protocol (RMCP) disabled

Integrated Intel Extreme Graphics 2	**3D/2D Controller**	Support is fully compliant with Microsoft standard API such as Direct Draw, GDI/GDI+ and Direct Show
	VGA Controller	Integrated
	Bus Type	AGP8X (Internal graphics is disabled if external AGP Graphics card is installed)
	RAMDAC	Integrated 350-MHz DAC
	Memory	Graphics memory is shared with system memory. Graphics memory usage can vary from 8 – 64MB depending on the amount of system memory installed and system load. 16MB is pre-allocated for graphics use at system boot time. Additional memory is allocated for graphics using Intel's Dynamic Video Memory Technology (DVMT) to balance the optimum amount of memory between graphics and other system use. With a 128MB system, graphics memory usage will be 8MB -32MB depending on system load. With 256MB or more, graphics memory usage will be 8MB - 64MB depending on system load.
	Controller Clock Speed	266 MHz
	Overlay Planes	Single Overlay support with 5x3 filtering
	Max Color Depth	32-bits/pixel
	Maximum Vertical Refresh Rate	85Hz at up to 1920 x 1440, 75Hz at 2048 x 1536. Varies with mode and configuration. See table below
	Multi-display Support	Support for one CRT via the motherboard's VGA connector. Support for an additional DVI-D display via the optional DVI ADD card. Intel's Dual Display Twin mode allows for displaying the same image on both the displays.
	Operating Systems	Microsoft Windows XP and Windows 2000
	Graphics API Support	Complete Microsoft DirectX® support, including DirectX 8.1; complete OpenGL 1.3 support. Compatible with DirectX 9.

Resolutions Supported (At various color depths & memory configurations) (**NOTE:** Refresh rates higher than 85Hz may be obtainable in some modes and configurations but are not recommended)

Resolution	Maximum Refresh Rate (Hz) DR266 Single Channel (8/16/32 bits/pixel)	Maximum Refresh Rate (Hz) DDR 266 Dual / DDR 333 Single Channel (8/16/32 bits/pixel)	Maximum Refresh Rate (Hz) DDR 333 Dual Channel (8/16/32 bits/pixel)
640 x 480	85/85/85	85/85/85	85/85/85
800 x 600	85/85/85	85/85/85	85/85/85
1024 x 768	85/85/85	85/85/85	85/85/85
1152 x 864	85/85/85	85/85/85	85/85/85
1280 x 720	85/85/85	85/85/85	85/85/85
1280 x768	85/85/85	85/85/85	85/85/85
1280 x 960	85/85/85	85/85/85	85/85/85
1280 x 1024	85/85/85	85/85/85	85/85/85
1400 x 1050	85/85/85	85/85/85	85/85/85
1600 x 900	85/85/85	85/85/85	85/85/85
1600 x 1200	85/85/85	85/85/85	85/85/85
1856 x 1392	75/75/60	75/75/60	75/75/60
1920 x 1080	85/85/75	85/85/85	85/85/85
1920 x 1200	75/75/60	75/75/75	75/75/75
1920 x 1440	85/85/60	85/85/60	85/85/60
2048 x 1536	75/75/NA	75/75/NA	75/75/60

7200 rpm SMART III Ultra 40-GB ATA/100 Hard Drives	**Capacity**	40,000 MB	
	Rotational Speed	7200 rpm	
	Interface	Ultra ATA/100	
	Height	1 in (25.4 mm)	
	Width	3.5 in (88.9 mm)	
	Transfer Rate Synchronous (Maximum)	100 MB/s	
	Seek Time (typical reads, including settling)	Single Track	1.2 ms
		Average	8 ms
		Full-Stroke	18 ms
	Physical Configuration	Logical Blocks	78,165,360
	Operating Temperature	41° to 131° F (5° to 55° C)	

Easy Access Keyboard (PS/2 or USB)	**Dimensions** (HxWxD)	1.4 x 18.3 x 6.3 in (36 x 465 x160 mm)	
	Weight	Approximately 2 lbs (0.9 kg)	
	Electrical	Operating Voltage	+ 5VDC ± 5%
		Power Consumption	50 mA maximum (with 3 LEDs on)
		System Interface	PS/2 mini-din connector
		ESD	CE level 4, 15 kV air discharge
		EMI-RFI	Conforms to FCC rules for a Class B computing device
		PC98	Functionally compliant
	Mechanical	Languages	30+ available
		Keycaps	Low-profile design
		Switch Actuation	55 g nominal peak force with tactile feedback
		Switch Life	20 million keystrokes (using Hasco modified tester)
		Switch Type	Contamination resistant membrane
		Key Leveling Mechanism	For all double wide and greater length keys
		Cable Length	6 ft (1.8 m)
		PC98-99	Mechanically compliant
		Acoustics	50 dBA maximum sound pressure level
	Environmental	Operating Temperature	50° to 122° F (10° to 50° C)
		Non-operating Temperature	-22° to 140° F (-30° to 60° C)
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	4 g peak acceleration

2-Button Scroll Mouse (PS/2 or USB)	**Scroll Wheel**	8 mm	
	Maximum Rotation Speed	30 mm/s	
	Switch Type	Light force micro-switch	
	Switch Life	1 million operations	
	Mechanical Life	Minimum 200,000 revolutions	
	Environmental	Operating Temperature	50° to 122° F (10° to 50° C)
		Non-operating Temperature	-22° to 140° F (-30° to 60° C)
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	4 g peak acceleration
	Electrical	Operating Voltage	+ 5VDC ± 10%
		Power Consumption	15mA
		System Consumption	PS/2 mini-din connector
		ESD	CE level 4, 15 kV air discharge
		EMI-RFI	Conforms to FCC rules for a Class B computing device
		PC98	Functionally compliant
	Mechanical	Resolution	400 ± 20% DPI
		Tracking Speed	10 in/s maximum
		Acceleration	100 in/s
		Switch Actuation	85 g nominal peak force
		Switch Life	1,000,000 operations (using Hasco modified tester)
		Cable Length	2 m
		PC98-99	Mechanically compliant
	Regulatory Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BCIQ, C-Tick	

TechSpecs - Optical Storage

48X Max CD-ROM Drive	**Interface**	ATAPI IDE
	Data Buffer	16.6 Mbps
	Data Transfer Rate	Sustained—150 Kbps minimum Variable (CD)—3,000 to 7,200 Kbps (audio)
	Disk Rotation Technology	CAV (Constant Angular Velocity)
	Access Time (ms)	Random: <100 ms Full-stroke seek: <150 ms
	Average Access Time	< 80 ms
	Cache Buffer (standard/maximum)	128 KB
	Disk Formats Read	Multi-session Photo CD, multi-read CD-ROM, CD text, audio CD, CD-I, CD-RW, CD-R, CD-Extra, CD-ROM XA
	Disk Formats Written	None
	Disk Capacity (CD)	650 MB
	Block Size	Mode 1—2,048 bytes Mode 2—2,340/2,336 bytes CD-DA—2,352 bytes CD-XA—2,328 bytes
	Diameter	12 cm; 8 cm
	Thickness	1.2 mm
	Track Pitch	1.6 µm
	Audio Output Level	Line-out—0.7 V @ 47 Kohm Headphone—0.6 V @ 32 ohm
	Startup Time	<7 seconds (typical); < 30 seconds with multi-session
	Operating Conditions	Temperature 41° to 113° F (5° to 45° C) Relative Humidity 10% to 80%
	Dimensions (H x W x D, maximum)	1.7 x 5.9 x 8.2 inches (4.3 x 15.0 x 20.8 cm)
	Weight	2.6 lbs (1200 g)
	Operating Systems Supported	Microsoft® Windows® NT 4.0, Microsoft Windows 2000, and Microsoft Windows XP.
	MPEG Playback Graphics Solution Support	None

16X/40X DVD-ROM with +R Read Drive	**Height**	5.25-in, half-height	
	Interface Type	ATAPI	
	Dimensions– External, Excluding Bezel (W x H)	5.88 x 1.71 in (149.5 x 43.5 mm)	
	Disc Diameter	12 cm, 8 cm	
	Disc Thickness	1.2 mm	
	Track Pitch	1.6 μm (CD), 0.74 μm (DVD)	
	Disc Center Hole Diameter	15 mm	
	Disc Formats	DVD-ROM (single and dual layer); DVD-video; DVD-R version 1.0 and 2.0; DVD-RW version 1.0 and 1.1; DVD-R multi-border; DVD+RW; DVD+R ; CD-ROM Mode 1 and 2; CD-DA; CD-ROM XA Mode 2, Form 1 and 2; CD-extra; CD-text; CD-I Mode 2, Form 1 and 2; CD-I ready; video CD, CD-bridge; PhotoCD (single and multi-session); CD-R; CD-RW	
	Disc Capacity	**DVD-ROM**	4.7 GB (DVD-5), 8.54 GB (DVD-9), 9.4 GB (DVD-10), 3.95 GB (DVD-R version 1.0), 4.7 GB (DVD-R version 2.0), 4.7 GB (DVD-RW version 1.0 and 1.1), 4.7 GB (DVD+RW), 4.7G (DVD+R)
		CD-ROM	540 MB (Mode 1, 12 cm), 640 MB (Mode 2, 12 cm), 700 MB (80 minimum CD-R and CD-RW), 180 MB (8 cm)
	Block Size (bytes)	DVD-ROM – 2048; CD-ROM Mode 0 – 2352; CD-ROM Mode 1 – 2352, 2340, 2336, 2048; CD-ROM Mode 2 – 2352, 2340, 2336, 2048	
	Access Times (typical reads, including settling)	**DVD-ROM Single Layer**	< 120 ms
		CD-ROM Mode 1	< 90 ms
		Full Stroke DVD	< 240 ms (seek)
		Full Stroke CD	< 160 ms (seek)
	Data Transfer Rates	2600 – 6000 KB/s (40X CAV CD-ROM mode)	
		8100 – 21,600 KB/s (16X CAV DVD-ROM mode)	
	Data Transfer Modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 3 (44.4 MB/s)	
	Power	**Source**	Four-pin, DC power receptacle
		DC Power Requirement	5 VDC ± 5% – 100 mV ripple p-p
			12 VDC ± 5% – 200 mV ripple p-p
		DC Current	5 VDC – <800 mA typical, < 1000 mA maximum
			12 VDC – < 870 mA typical
	Audio Output Level	0.7 Vrms (typical)	
	Configuration Jumper Block	Master, slave, and cable select modes	
	Data Interface Connector	40-pin, shrouded and keyed, flat ribbon	
	Environmental (all conditions non-condensing)	**Temperature** (operating)	41° to 122° F (5° to 50° C)
		Relative Humidity (operating)	10% to 85%
		Maximum Wet Bulb Temperature (operating)	86° F (30° C)
	Certifications, Approvals	MMC II support, multi-read certification, Microsoft WHQL certification, ACA AS/NZS 3548 class B, CNS 13438, C.I.S.P.R. Pub 22, TUV or VDE EN60950, EN 55022, EN55024, SEMKO, NEMKO, DEMKO, FIMKO, EN 60825-1, UL 60950, and CSA C22.2 60950-2000.	
	Operating Systems Supported	Microsoft Windows NT, Microsoft Windows 2000, and Microsoft Windows XP.	

TechSpecs - Removable Storage

1.44-MB Diskette Drive	**Diskette Size**	3.5 in (8.89 cm)	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per diskette (high/low density)	1.44 MB/720 KB	
	Drive Supported	One	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500/250 Kb/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	169/94 ms
		Settling Time	15 ms
		Latency Average	100 ms

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